

Remarks

In the subject action, claims 1, 4, 6-10, 14, 16-23, 28-29 and 32-35 were rejected under 35 U.S.C § 102(e) as being anticipated by Westerinen et al. (US Patent No. 2004/0088589). Claims 2, 3, 11-13, 15, 24-27, and 30-31 were rejected under 35 U.S.C § 103(a). Claim 5 was objected as being dependent upon rejected base claim, but would be allowable if rewritten in independent form. The applicant takes this opportunity to thank the examiner for allowing the subject matter of claim 5. However, the applicant respectfully disagrees with the examiner, therefore requests reconsiderations of these rejections and objection for at least for the reasons set forth.

Claims rejected under 35 USC § 102(e)

Regarding claim 1, in response to AC failure, Westerinen teaches of switching to a battery only long enough for the operating system to save the state data, to go to a hibernation (ACPI S4) state in which the state data is persistently stored, and shutting battery power off after completing the hibernation process (paragraph 0024).

By contrast, in response to AC failure, claim 1 instructs of supplying power from a backup power source, initiating a suspend process (referred to as the S3 state in the prior art ACPI context), and intervening into the suspend process to save the state data, before completing the suspend process and placing the system in a suspend to memory state, sustained by the backup power. The invention as claimed signifies (a) an early deviation from the normal flow of the suspend process, (b) performed through the intervention by a BIOS into a suspend state process initiated by an OS. Furthermore, the method claimed by claim 1 is unique, because it calls for a new approach, which is to perform the recited operations external to the operating system (through intervention by a BIOS), which is completely opposite to the prior art operating system centric approach taught by Westerinen. Hence, the applicant respectfully submits that Westerinen has not disclosed these features of claim 1. For at least these reasons, claim 1 is patentable over Westerinen.

Claims 2-7 depend from and add features to claim 1. Hence, at least for the reasons that claim 1 is patentable over Westerinen, claims 2-7 are also patentable over Westerinen.

Regarding claim 8, in an AC failed condition, Westerinen speaks of a battery sustaining power merely long enough for the operating system to save the state data and to go to hibernation state (ACPI S4 state) in which the state data is persistently stored before the battery power is disconnected (paragraph 0024). Contrary to claim 1, where the apparatus is maintained in a suspend to memory state (ACPI S3 state) by a backup battery. Moreover, in paragraph 0034, Westerinen tells of a power management controller, in hibernation state (S4 on AC power), waiting for AC power to be steady. However, Westerinen neglects to state of monitoring for AC re-application while the apparatus in the suspend to memory (S3) state maintained by the backup power. Therefore, for at least these reasons claim 8 is patentable over Westerinen.

Claims 9 and 10 depend and add features to claim 8, for at least the same reasons claim 8 is patentable over Westerinen, claims 9 and 10 are also patentable over Westerinen.

In regards to claim 14, the recited reference talks of an OS initiated the hibernation (S4) state in which the state data is persistently stored (paragraph 0024). Counter to claim 1 recitation of a BIOS intervening a suspend process (S3 state) initiated by an OS, to save the state data in the persistent storage. Moreover, in an AC failed condition, Westerinen instructs of a controller to cause the OS to place the system in a hibernation state; opposite that of claim 1 which cites of a controller causing the OS to place the system in a suspend to memory (S3) state. Thus, for at least these reasons, claim 14 is patentable over Westerinen.

Claims 15-20 depend and add features to claim 14; therefore, for at least the same reasons that claim 14 is patentable over Westerinen, claims 15-20 are also patentable over Westerinen.

With respect to claim 21, under AC failure condition, Westerinen asserts of a backup power source to maintain sufficient power for the OS to save the state data and complete hibernation (S4 state) before turning off the battery power (paragraph 0024). However, Westerinen omits to instruct of backup power source to sustain the memory for at least a time period, while the system is suspended to memory (S3 state), under AC failure condition. Westerinen further speaks of restoring to the previous condition prior to hibernation process by reading the special file 64 on the hard drive and writing it back into the RAM 17 (paragraph 0024). Claim 1 recites of differently, resuming from the previously suspended operational saved state in memory, which context is maintained by a backup power source. Therefore, for at least these reasons claim 21 is patentable over Westerinen.

Claims 22 and 23 depend and add features to claim 21. Thus, for at least the same reasons claim 21 is patentable over Westerinen, claims 22 and 23 are also patentable over Westerinen.

As per claims 28, the cited reference talks of an OS initiating a hibernation (S4 state) process in response to an AC failure (paragraph 0028), in which the state data is persistently stored (paragraph 0024). However, the cited reference, fails to speak of a suspend (S3 state) process (instead of an S4 hibernation state) initiated in response to an AC failure. It further fails to instruct of a programming instruction designed to intervene the said suspend process to save a persistent copy of the state data; hence, the saving of state data is not performed in the hibernation or suspend state. The applicant submits in view of the reasons set above, claim 28 is patentable over Westerinen.

Claim 29 depends and adds to claim 28 with its recitation; thus, for at least the same reasons claim 28 is patentable over Westerinen, claim 29 is also patentable over Westerinen.

Regarding claims 32 and 34, Westerinen teaches of a diversity of responses due to reasons other than AC failure (for example: power button event, AC re-application) depending on the current state, such as:

- when the computer is in the standby (S3 on AC power) state 92, the power management controller wakes up the system to resume to working state 90 when the user presses the power button [figure 4 and paragraph 0032];
- when the computer is in the working state, the power management controller instructs the OS to enter standby (S3 on AC power) state 92 when the user presses the power button [figure 4 and paragraph 0032];
- when the computer is in power off (ACPI S5) state, an AC re-application event causes it to transition to hibernation (S4 on AC power) state (figure 4 and paragraph 0034); or
- when the computer is in the hibernation (S4 on AC power) state 106, a power button event causes the computer to resume to working state 90 [figure 4 and paragraph 0034].

By contrast, claim 32 and 34 cited of a single unitary response due to reasons other than AC failure, to initiate a suspend process to place the apparatus in a suspend to memory state. Westerinen also speaks of signaling of AC failure condition (asserting ON_BATT signal) in response of AC failure condition (paragraph 0033); however, Westerinen fails to teach of signaling of AC failure condition due to reason other than AC failure. Westerinen further instructs of preserving a persistent copy of the state data in hibernation state, in response to an AC failure; yet neglects to instructs of persistently stored the state data due to reasons other than AC failure. For at least these reasons, claims 32 and 34 are patentable over the cited reference.

Claims 33 and 35 depend and add to claims 32 and 34, respectively. For at least the same reasons claims 32 and 34 are patentable over Westerinen, claims 33 and 35 are also patentable over Westerinen,

Claims rejected under 35 USC § 103(a)

Claim 2 was rejected under 35 USC § 103(a) as being unpatentable over Westerinen and in further view of Hsu (US Patent No. 6, 618,813). Claims 3 and 15 were rejected under 35 USC § 103(a) as being unpatentable over Westerinen and in further view of Cheok (US Patent No. 2004/0073818). Claims 11-13, 24-27, and 30-31 were rejected under 35 USC § 103(a) as being unpatentable over Westerinen and in further view of Mustafa. The applicant requests reconsiderations for at least the following reasons.

Claim 2 was rejected as being unpatentable over Westerinen as applied to claim 1, and in further view of Hsu et al. (US Patent No. 6,618,813). Hsu's teaching does not cure the previously discussed deficiencies of Westerinen, therefore claim 1 remains patentable over Westerinen, even when combined with Hsu. Claim 2 depends and adds on claim 1, incorporating its recitation; thus, for at least the same reasons that claim 1 is patentable over Westerinen and Hsu combined, claim 2 is also patentable over Westerinen in view of Hsu.

Claim 3 was rejected as being unpatentable over Westerinen as applied to claim 1, and in further view of Cheok et al. (US Patent No. 2004/0073818). Cheok's instruction does not cure the discussion above regarding the deficiencies of Westerinen, therefore claim 1 remains patentable over Westerinen, even when combined with Cheok. Claim 3 depends on claim 1, incorporating its recitation. For at least the same reasons that claim 1 is patentable over Westerinen and Cheok combined, claim 3 is also patentable over Westerinen in view of Cheok.

Regarding claims 11, in response to AC power re-application, Westerinen talks of returning from the full "off" state to the hibernation (S4 on AC power state 106), where the system remains and awaits to be waken up by the power management controller or the user pressing the power button to resume to working system 90 [figure 4 and paragraph 0034]. Whereas claims 11 teaches of directly commencing a cold start reset

process on AC re-application while the apparatus is in an un-powered state, without going through the hibernation state and wait for the power management controller or the user pressing the power button. The edifications of Mustafa does not alleviate the deficiencies of Westerinen as discussed above. Therefore, claim 11 is still patentable over Westerinen, even when combined with Mustafa. For at least these reasons, claim 11 is patentable over Westerinen, and in further view of Mustafa.

Claims 12 and 13 depend and add to claim 11; thus, for at least the same reasons claim 11 is patentable over Westerinen and in further view of Mustafa, claims 12 and 13 are also patentable over Westerinen and in further view of Mustafa.

In regards to claim 15, Cheok instruction does not cure the discussion above regarding the deficiencies of Westerinen as applied to claim 14, therefore claim 14 remains patentable over Westerinen, even when combined with Cheok. Claim 15 depends on independent claim 14, incorporating its recitation. Thus, for at least the same reasons claim 14 is patentable over Westerinen and Cheok combined, claim 15 is also patentable over Westerinen in view of Cheok.

Claim 24 includes in substance the distinguishing recitations discussed above for claim 11. Thus, for at least the same reasons claim 11 is patentable over over Westerinen and in further view of Mustafa, claim 24 is also patentable over Westerinen and in further view of Mustafa.

Claims 25-27 depend on claim 24 with all its recitation. For at least the same reasons claim 24 is patentable over Westerinen, and in further view of Mustafa, claims 25-27 are also patentable over Westerinen, even combined with Mustafa,

Claim 30 includes in substance the distinguishing recitations discussed above for claim 11. Thus, for at least the same reasons claim 11 is patentable over over Westerinen and in further view of Mustafa, claim 30 is also patentable over Westerinen and in further view of Mustafa.

For at least the same reasons as claim 30, claim 31 that depends and adds to claim 30, is also patentable over Westerinen, even in further view of Mustafa.

Claim Objections

Claim 5 has been rewritten in independent form including the limitations in their respective base claims and any intervening claims to overcome the objection, but not for overcoming any prior art. No new matter has been introduced.

Conclusions

In view of the foregoing, the applicant respectfully submits that claims 1-35 are in condition for allowance. Early issuance of Notice of Allowance is respectfully requested.

The Commissioner is hereby authorized to charge shortages or credit overpayments to Deposit Account No. 500393.

Respectfully submitted,

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